



Section 1 - Identification of The Material and Supplier

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Chemical nature: Metolachlor is a chloroacetanilide derivative.
Trade Name: Farnoz Clincher Plus Herbicide
Product Use: Agricultural herbicide for use as described on the product label.
Creation Date: September, 2006
This version issued: August, 2012 and is valid for 5 years from this date.

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xi, Irritating. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code. However, this is a C1 Combustible Liquid so must be stored and handled as specified in AS 1940 "The storage and handling of flammable and combustible liquids."

Risk Phrases: R36. Irritating to eyes.

Safety Phrases: S2, S13, S25, S26, S28, S46, S61, S20/21, S36/37/39. Keep out of reach of children. Keep away from food, drink and animal feeding stuffs. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. After contact with skin, wash immediately with plenty of soap and water. If swallowed, contact a doctor or Poisons Information Centre immediately and show this container or label. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. When using, do not eat, drink or smoke. Wear suitable protective clothing, gloves and eye/face protection.

SUSMP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.

UN Number: None allocated

Emergency Overview

Physical Description & colour: Brown liquid.

Odour: Faint odour.

Major Health Hazards: Signs of human intoxication from Metolachlor exposure include abdominal cramps, anaemia, shortness of breath, dark urine, convulsions, diarrhoea, jaundice, weakness, nausea, sweating, and dizziness. This product is also an eye irritant.

Potential Health Effects

Inhalation:

Short term exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Long Term exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short term exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

Long Term exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short term exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Long Term exposure: No data for health effects associated with long term eye exposure.

Ingestion:

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Short term exposure: Significant oral exposure is considered to be unlikely. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms (detailed above) may also become evident, but should slowly disappear once exposure has ceased.

Long Term exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, g/L	TWA (mg/m ³)	STEL (mg/m ³)
Metolachlor	51218-45-2	960g/L	not set	not set
Other non hazardous ingredients	secret	to 1L	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Skin Contact: Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: >93°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: C1

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC, Viton. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend

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that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. If you store large quantities (tonnes) of such products, we suggest that you consult your state's Dangerous Goods authority in order to clarify your obligations regarding their storage.

Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m³)	STEL (mg/m³)
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Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Metolachlor is set at 0.08mg/kg/day. The corresponding NOEL is set at 7.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Sept 2011.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, Viton.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Brown liquid.
Odour:	Faint odour.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No data.

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Vapour Pressure:	3.7mpa at 25°C
Vapour Density:	No data.
Specific Gravity:	1.11-1.13 at 20°C
Water Solubility:	480ppm at 20°C
pH:	5-9
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	No data
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: An information profile for Metolachlor is available at <http://extoxnet.orst.edu/pips/ghindex.html>

Acute toxicity: Metolachlor is harmful by ingestion. The reported oral LD50 in rats for technical grade Metolachlor is from 1200mg/kg to 2780mg/kg. It is practically nontoxic by skin exposure, with a reported dermal LD50 of greater than 2000mg/kg. Technical Metolachlor is a skin sensitizer in guinea pigs, and causes slight irritation and mild eye irritation in rabbits. The 4-hour rat inhalation LC50 of greater than 4.3mg/L indicates slight toxicity via this route. Human exposure most commonly occurs through skin or eye contact. Signs of human intoxication from Metolachlor exposure include abdominal cramps, anaemia, shortness of breath, dark urine, convulsions, diarrhoea, jaundice, weakness, nausea, sweating, and dizziness.

Chronic toxicity: While Metolachlor is not readily absorbed by the skin, repeated dermal exposures may create skin sensitization, especially among those who work with Metolachlor. In rats fed Metolachlor for 90 days, no effects were noted at about 90mg/kg/day. In a 2-year study of mice, a similar no-effect level was found, but doses of about 300mg/kg/day caused decreased body weight gain.

Reproductive effects: In two long-term rat reproduction studies, mating, gestation, lactation, and fertility were not affected at doses of 50mg/kg/day. However, pup weights and parental food consumption decreased at this low dose. The evidence suggests that Metolachlor is not likely to have an effect on reproduction in humans under normal circumstances.

Teratogenic effects: Metolachlor caused no birth defects in rats at maternal doses of 300mg/kg/day administered during critical periods of gestation (organogenesis), although some delayed or abnormal development in offspring was seen at this dose. These data indicate that teratogenic and developmental effects in humans are unlikely at expected levels of exposure.

Mutagenic effects: Metolachlor tested negative in two bacterial assays. Also, no mutagenicity effects were noted in a standard mouse test. From this evidence it is unlikely that the compound is mutagenic.

Carcinogenic effects: Male and female mice exposed to doses up to 100mg/kg/day for 18 to 20 months did not develop cancer, nor did male rats at doses of up to 150mg/kg/day over a 2-year period. From these data, it seems unlikely that Metolachlor is carcinogenic in humans.

Organ toxicity: Exposure to Metolachlor can damage the liver and cause irritation of the skin, eyes, and mucous membranes. It has also caused skin sensitization in guinea pigs.

Fate in humans and animals: Studies show that orally administered Metolachlor is quickly broken down into metabolites and is almost totally eliminated in the urine and faeces of goats, rats, and poultry. Metolachlor itself was not detected in the urine, faeces, or body tissues.

Section 12 - Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

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Breakdown in soil and groundwater: Metolachlor is moderately persistent in the soil environment. Half-lives of 15 to 70 days in different soils have been observed. Soils with significant soil water content may show more rapid breakdown.

Breakdown in water: Metolachlor is highly persistent in water over a wide range of water acidity. Its half-life at 20 C is more than 200 days in highly acid waters, and is 97 days in highly basic waters. Metolachlor is also relatively stable in water under natural sunlight.

Breakdown in vegetation: Metolachlor, applied before plants emerge, is absorbed through shoots just above the seed, and may be absorbed from the soil into and through the roots. This chemical acts by inhibiting the production of essential plant components like chlorophylls, enzymes, and other proteins. Metolachlor is a growth inhibitor affecting root and shoot growth after seeds have germinated.

Section 13 - Disposal Considerations

Disposal: Instructions concerning the disposal of this product and its containers are given on the registered label. These should be carefully followed. Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

ADG Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Metolachlor, is mentioned in the SUSMP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

Contact Points:

Call Adama on (02)9431 7800 and ask for the technical manager.

Fax: (02)9431 7700

Police and Fire Brigade:

Dial 000

Emergency contact:

1800 024 973 (24 hours)

If ineffective:

**Dial Poisons Information Centre
(13 1126 from anywhere in Australia)**

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Please read all labels carefully before using product.

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Issued by: Adama Australia Pty Ltd

Phone: (02)9431 7800 (office hours)

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)



This MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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